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ABSTRACT

There are descriptive similarities on a global level between the history of writing and the development of written language in the young child. Examination of the specific developmental patterns of data of these two phenomena reveals some common elements and some discrepancies between these two patterns. The history of orthography as well as research concerning children's developing knowledge of written language reveals that both phenomena in general proceed toward an understanding of the alphabetic principle. However, the order in which the knowledge and discovery occurs in the child as well as just what knowledge becomes understood during the progression toward the conventional, alphabetic adult model does not follow a strict one-to-one recapitulation model or explanation. To understand the cognitive and linguistic processes involved in written language both at the individual and at the historical level, the linguistic, cognitive, and cultural contexts in which that processing occurs must be examined. Similarly, with regard to the development of written language in the young child, it appears that the presence of environmental print is essential since written language is fundamentally cultural and social in nature. A fruitful source of information in analyzing the obstacles to be overcome in becoming literate lies in the search for similarity at the historical as well as the individual level. (Thirty-eight references are attached.) (RS)

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Northern Illinois University

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June E. Barnhart
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AN ANALYSIS OF THE HISTORY OF WRITING AND YOUNG CHILDREN'S LITERACY ACQUISITION

ABSTRACT

The present paper presents a theoretical examination of young children's developing understanding of written language as a symbol system. To this end, the paper draws from the knowledge base that describes two levels of orthographic development. First, at a global level, the evolutionary development of writing across time for humanity is presented. Second, at a more focused level, empirical descriptions of the development of writing in the young child is presented. Consideration is given to potential parallels and divergences that can be drawn across these two levels in order to more fully account for the activity of becoming literate.

The Young Child's Developing Understanding of Written Language As a Symbol System

A major feature of the human species, distinguishing it from other species, is the ability to use vocal speech as a means of communicating ideas and abstractions. In fact, whenever people come together, they talk. We talk to our friends, our work associates, our family; we talk to strangers and to our opponents. We talk face to face and over the telephone. Further, television and radio add to this swell of words. There is hardly a moment in our waking lives that is free from words. This possession of spoken language more than any other attribute distinguishes humans from other animals (Holzman, 1983).

To many philosophers, the possession of spoken language is the source of human life and power; however, the development of writing was one of the greatest human inventions allowing mankind to transcend time and space. In fact, it is often difficult to imagine language without writing; the spoken word seems inextricably tied to the written word. But millions of people in the world speak languages with no written form. Among these people oral literature abounds, and crucial knowledge is memorized and passed on orally between generations. However, human memory is short-lived, and the brain's storage capacity is finite. The development of writing overcame such problems and allowed communication across both space and time. According to an old Chinese proverb, "The palest ink is better than the sharpest memory." Thus, writing permits a society to permanently record its history, its literature, and its technology.

Writing---the act of expressing thoughts by means of written symbols---is a mysterious process. No one understands exactly how we learn to do it, but it appears that we learn to write at least as much by the discovery process as by being formally taught. But, when does writing begin? Is it when the child composes a readable message to serve some communicative purpose? Is it when the child uses letters to spell words with some approximate degree of accuracy in relation to the conventional, adult production? Or, is it when the child makes some wiggly lines on paper and pretends to be reading the production?

Over the past decade, research results in emergent literacy have shown that long before knowing how to read and write in the conventional meaning of these terms, young English-speaking (Barnhart, 1986, 1988; Barnhart & Sulzby, 1984; Bissex, 1980; Clay, 1975; Cook-Gumperz & Gumperz, 1981; Dyson, 1982; Sulzby, 1981, 1985; Sulzby, Barnhart & Hieshima, 1989) and Spanish-speaking (Ferreiro & Teberosky, 1982) children are able to interpret the written language system of their culture in a consistent way (although, often in a way that is entirely different from adults). Further, it appears that children explore various hypotheses before discovering that the writing surrounding them is alphabetic in nature. The writing that precedes the discovery of the alphabetic principle, however, is far from unstructured. Rather, it provides evidence of children's efforts in their search for an understanding of the rules of the writing system. Hence, the question of <u>how</u> children become writers and readers before they are writing and reading conventionally has been an issue of growing importance in cognitive developmental research.

If every child went about discovering how to write in his or her own way, there would be as many books on young children's writing as there are young children. But research focusing on early literacy reveals that even when they have not yet received formal instruction in writing, most children at some point in development make very similar sets of discoveries (Sulzby, 1985). This is indeed puzzling since our alphabetic writing system and its use is a complex matter. The fact that most children make similar discoveries in coming to understand our writing system is phenomenal; moreover, the discoveries are not the result of mere coincidence.

The guiding interest of the present paper revolves around a theoretical examination of the young child's developing understanding of written language as a symbol system. More specifically, in an effort to

understand written language development in the young child, the history of orthography will be examined in order to grasp some notion of what there is to be discovered about written language at a global level. The present discussion searches for patterns and parallels that can be discerned between the two levels of orthographic development (i.e., phylogenetic and ontogenetic) that may hold promising and insightful implications for researchers who study early literacy development in children. Finally, this paper attempts to explain parallels in broad developmental patterns of change between the two phenomena by suggesting a common mechanism of change at the global level.

The Evolution of Writing

In his book, A Study of Writing, Gelb (1963) traces the history of writing from its earliest stage of expressing meaning via loose connections with speech, to the later stage of writing as an expression of meaning via a linguistic speech form. While a detailed and comprehensive account of the history can be secured from Gelb (1963), the following discussion presents a brief sketch of the salient relationships and patterns relevant to the discussion at hand. The writing systems to be discussed here include pictures, phonography-word syllabic, phonography-syllabic, and phonography-alphabetic.

Pictures

While early drawings such as those found on caves were literal portrayals of aspects of life at any particular time, we have no way of knowing why they were produced...they may well have been aesthetic expressions rather than communication. Later drawings, however, appear to clearly be primitive ways of communication by means of visible symbols.

According to Gelb (1963), there were devices by which man first attempted to convey his thoughts and feelings by means of pictures in order to convey intended meaning. Thus visible, drawn forms expressed meaning directly without an intervening linguistic form, and Gelb describes two such devices. Within one class of devices are the widely used systems of pictographic or ideographic writing, perhaps best represented by the American Indians. This stage in the history of writing is called "descriptive" or "representational" by Gelb (1963), since these pictures served to communicate ideas by means of pictures, each of which separately or by their sum total, suggested the intended meaning. Similarly, this stage has

been called VORSTELLUNGSCHRIFT (representational writing) or GEDANKENSCRIFT (thought writing) by the Germans.

But there are other possibilities for human communication that played a role in serving as the basis for the evolution of writing. For example, primitive man may have originally drawn a picture of a panther on his shield for the magical purpose of transmitting strength. Over time, however, the panther on the shield may have become a symbol that communicated to others the fact that the shield was owned by a specific person. Hence, the symbol of the panther became a property mark, and the aim of this property mark was utilitarian writing. According to Gelb (1963), markings that stood for a personal name served an important step in the development of writing.

A specialized system of this sort can be found in the heraldic symbols used by the military as identification marks. Additionally, there are the symbols for the various professions and crafts in modern Europe, such as a key for a locksmith. Further, potters' marks can be found on pottery of historical periods from Egypt, and the custom of branding animals belongs to the same class of devices. Similar to these examples of devices that identify either the owner of a certain object or its maker are the examples of the devices of the forerunners of writing expressed by mnemonic signs. For example, a picture of a threaded needle and cloth represented the proverb, "The needle sews great cloth" (in other words, "Small things can achieve greatness.").

Phonography-Word Syllabic

Full systems of writing with unifying underlying principles of writing originated for the first time in the Orient (Gelb, 1963). Logograms (or signs for words of the language) were created by means of various devices. Among the most simple and natural were the devices that created word signs by representing concrete objects and actions by pictures of objects or of a combination of objects (e.g., the sun can be expressed by a picture of the sun). Other devices created pictures from various geometric forms rather than going back to the original pictures (e.g., The drawing of a semicircle expressed "one" and a full circle expressed "all" or "totality".).

These were simple devices for creating word signs and may have been capable of taking care of the modest requirements of primitive systems, but they were not sufficient for systems that required the expression of more exact variations of language. Logographic writing could never hope to be able to express all of the existing words of a language, let alone all of the proper names and new words. It was the invention of the phonetic principle that was instrumental in opening new horizons in the history of writing.

With the introduction of phonetization, a new device was created by means of phonetic transfer. Thus, the "rebus" system was developed. When a graphic sign no longer has any visual relationship to the word it represents it becomes a symbol for the sounds which represent the word. A single sign can then be used to represent all words with the same sound; i.e., the homophones of the language. However, this is not a very efficient system since the words of many languages do not lend themselves to subdivision into sequences of sounds that represent independent meaning. Nevertheless, this device led to a syllabic writing system that had many advantages over word-writing.

Phonography-Syllabic

Syllabic signs originated from word signs, and out of the word-syllable systems four syllabary systems developed whereby each syllable in the language was represented by its own symbol in a syllabic writing system. Words were written by juxtaposing the symbols of their individual syllables.

Phonography-Alphabetic

Even in a language with a "simple" and regular structure the number of syllables which would have to be used is enormous. As a result, alphabetic writing systems (i.e., those in which each syllable represents one phoneme) were invented as maximally efficient systems for transcribing any human language.

Writing Development in Young Children

From this overview of the history of writing we now turn to look at writing development on a different level...writing development in young children. Over the past decade we have begun to realize that

children who are not yet writing and reading conventionally nevertheless exhibit knowledge of features of the written language of their culture (e.g., Applebee, 1978; Clay, 1975; Cook-Gumperz & Gumperz, 1981; Ferreiro & Teberosky, 1982; Goodman, 1980; Harste, Woodward, & Burke, 1984). For example, by using approximations to conventional English orthography as her stimulus items, Lavine (1977) found that 3- and 4-year-old children develop the ability to distinguish features of conventional English writing.

Over the past decade, researchers in emergent literacy have begun to ask, "How do young children produce and interpret their own text?" In an effort to shed light on this question, Piagetian scholars Emilia Ferreiro and Ana Teberosky propose that children have ideas (or, hypotheses) which they continually test against the environment and against the information which they receive from others around them. Their research attempts to demonstrate how young children progress through various hypotheses about written language until they develop notions similar to those of literate adults. Further, they propose that their research to date supports several notions. First, there are modes of interpretations of the writing system of a culture that are genetically ordered and which precede the acceptance of basic hypotheses concerning the alphabetic system. Second, such modes of interpretation, coming earlier in development, are constituent parts of the final modes of intepretation. Thus, Ferreiro and Teberosky's (1982) interpretation of their research suggests parallels between the history of the development of writing and the young child's progress toward conventional writing; i.e., parallels between the phylogenetic and ontogenetic levels of development. However, while research by other investigators shows some similarity in many of the overall writing behaviors observed in young children, somewhat different patterns of data are reported.

Sulzby (1981, 1983) and Barnhart and Sulzby (1984) have traced children's use of writing systems and their ability to read their writing. When kindergartners were asked "What can you write?" they most often used conventional spelling and conventional letters; however, when asked to write a story, 5-year-olds used a range of writing behaviors (Sulzby, 1985). Similarly, when they were asked to write isolated, familiar words they often used conventional and full invented spelling. Yet when these same children were asked to write a story, they used a variety of writing systems that were similar to those reported by other

researchers (Barnhart & Sulzby, 1984). More specifically, when children were asked to write a story, some children chose to draw their story, while others used writing-like forms such as scribbling or curved letterlike forms. Others used strings of letters or name-elements to stand for their stories. Still others used invented spelling systems, varying from one letter to stand for one syllable (the "syllabic hypothesis" per Ferreiro & Teberosky, 1982) to sequential spellings of the kind first described by Read (1971) and Beers and Henderson (1977), and more recently reported by Morris (1981) and Burns and Richgels (1989). A few children used some conventional spelling. More recent research by Barnhart (1986, 1988) confirms the variety in writing systems earlier reported by Barnhart and Sulzby (1984). Thus, when the task demand was increased from a request to write either isolated familiar words or anything they wanted to write, to a request to create a whole text on a specific topic it perhaps meant that these 5-year-olds had to deal with a task outside of their conventional resources (Barnhart, 1986, 1988; Barnhart & Sulzby, 1984).

In general, the results from research to date reveal that children can be described as having knowledge that is correct by conventional standards, as well as knowledge that is emerging toward the conventional along a logical path based on features of written language, both in its graphic form and in its function. However, rather than a strict developmental sequence, Sulzby (1985) proposes that these writing systems are part of a many-featured repertoire. Thus, children appear to fall back on lower-level knowledge in order to accomplish a higher-order goal.

Marie Clay (1975) observed children's use of various features of written language in their own compositions, including those features that concern direction, variety and multiplicity of characters, and the idea that signs represent objects or ideas (but not directly the way that pictures do). Clay claims that the child goes through a gradual development of perceptual awareness of the arbitrary customs used in written English. In other words, there are different stages of awareness about written language. However, she cautions that if there is an acquisition sequence that can be described for all children, she has not been able to discover it in her observations of young children. Instead, her observations of written language development suggest that children do not learn about language on any one level of organization before they manipulate units at a higher level. For example, when they know a few letters they can produce

several words, and with several words they can generate a variety of sentences. Thus, as the child learns to write there is an intermingling of language learning across levels (Clay, 1975).

Donald Graves (1983) concludes from his research that there is much for young children to learn to control in writing. When they first write, children's messages go in many directions. They may start in the middle, lower right, or upper left of the page and proceed in a column form or even diagonally. If the child is aware of word separation words may follow in columnar form, or even in a circle. While most words in conversation are run together, advanced writers may demonstrate knowledge of a feature of written language in their production by including breaks for words. Even though 30% of the children Graves (1983) studied had not been involved in any preschool experience, at the start of first grade all of the children wrote in their own fashion when the teacher extended a request to "write." Some children drew; others wrote only their own names. Some wrote numbers and letters, while a few wrote in sentences. Importantly, none of the children believed that they couldn't write. Graves concludes that these data on children's transition from speech to print offer a base for observing children as they change in the writing process; however, he cautions that we must look carefully since every child does not fit a singular pattern.

Parallels Between the History of Writing and Writing Development in the Young Child

The history of writing clearly shows that the concept of alphabetization took humanity a great deal of time to establish. Similarly, in children the development of this concept is gradual and evolving. Thus, the concepts involved in the invention of successively more analytic scripts over cultural time appear to follow a similar overall direction in the development of written language in the young child: the idea that meaning can be represented with visual symbols; the idea that this can be accomplished by mapping the symbols onto already learned speech; the idea that new meaningful elements can be generated by combining smaller elements for their sound values; and the idea the elements used in alphabetic writing are approximately the phonemes.

Thus, at this global level the development of written language in the child appears to be conceptually ordered in a manner similar to the historical development of orthographies. They both to reflect a gradual increase in the abstractness of the explicit knowledge required of the learner; i.e., primitive scripts allow the learner to focus his or her attention on concrete linguistic categories (morphemes and syllables), while alphabets require a focus on the abstract phonemes and phones. Thus, children become more aware of increasingly more abstract linguistic levels and categories.

According to Flavell (1971, 1977), development is considered to be systematic change. If one then reconstructs the various phases of writing through history and also reviews research concerning the young child's knowledge of written language, it appears that both phenomena/processes follow a line of development that can be characterized as "unidirectional." In other words, the change systematically occurs in one overall direction. Thus, on both levels of analysis of the evolution of writing, change appears to follow a direction from less to more abstractness in knowledge of linguistic categories. There is no reverse development---an alphabet does not develop into a syllabary, and a syllabary does not lead to the creation of logography. Similarly, the young child does not look for relations between graphic characters and their reference to sound, and then move backwards to thinking that there might be a concrete relation between written marks and the things for which they stand.

Thus, both phenomena---the evolution of writing across time and the development of writing in the young child---change systematically in a similar manner at a global level. However, it must now be asked whether the patterns of development are similar. Are there similarities in the change patterns for each phenomena? It has been argued in this paper that there is systematic change in both the history of writing and writing in the young child. Further, it has been argued that on a global level both phenomena change in a direction toward abstract alphabetization. However, careful analysis beyond this global level suggests that it here that the parallels stop. Instead, it appears that the two phenomena are tied to two different data patterns with regard to issues of order of events.

Discrepancies Between the History of Writing and Writing Development in the Young Child

This review of the history of writing suggests a hierarchical developmental sequence. In this type of pattern simpler constituents develop earlier, and the more complex structures develop later. In tracing the history of writing, the present discussion has shown that human linguistic communication moved from a time when men drew pictures representing their ideas on rocks and cave walls. Gradually, this "idea writing" gave way to the representation of words or the spoken language itself---first the units of speech transcribed were syllables (e.g., in Mesopotamian cuneiform scripts) and later a transcription of abstract phonemes (i.e., the alphabet) was invented. Thus, the evolution of writing moved in steps from a point where meaning was transcribed directly via pictures toward the transcription of meaning by sound.

In fact, Gelb (1963) argues that in reaching its ultimate development, any system of writing (whatever its forerunners may be) must pass through these stages in the following order: logography, syllabography, and alphabetography. According to this principle then, no writing can start with a syllabic or alphabetic stage unless it is borrowed, directy or indirectly, from a system that has gone through all of the previous stages. A system, of writing can naturally stop at one stage without evolving further, and thus some writing systems have stopped at the logographic or syllabic stage. According to Gelb (1963), however, if the evolutionary process is to continue, no stage of development can be skipped.

On the other hand, empirical evidence suggests that children's changes in written language knowledge may follow a pattern of "developmental synchrony." If the development of performance A and B does not form a consistent sequence in a sample, the synchronous development of two or more performance capabilities may emerge together during some interval of time. The development of writing behaviors does not form a consistent sequence across all children, and research suggests instead that there may be the synchronous development of two or more writing behaviors which are unordered.

A close look at the research describing the young child's developing conceptualization of written language reveals that at a young age, drawing is only one of a variety of forms of graphic representation used by children. When allowed, they very often use writing systems that are very different from the

alphabetic one that is the conventional system of our English language. They use forms of scribbling, as well as letter strings or elements of their names, and even use invented spelling to represent stories that they compose. Yet, very often these same children will write familiar, isolated words such as MOM, DAD, LOVE, and DOG using the conventional adult model. Further, Gundlach and Moses (1976) report that young children often draw in conjunction with writing, suggesting that we must view written language development within the larger context of the child's developing use of many kinds of symbols.

Instead of learning about written language in a serial manner, the various perspectives of the literature on early literacy suggest that the young child uncovers several features of written language concurrently. For example, the child forms notions about the perceptual features (Clay, 1975), the relationship between print and speech (Ferreiro & Teberosky, 1982), the structural characteristics (Applebee, 1978), the sociocognitive nature of written language (Cook-Gumperz & Gumperz, 1981) as well as the functional capacities in print (Goodman, 1980). Slowly, from infancy onward, children develop knowledge about writing and reading, and gradually these various notions form patterns that become more and more integrated and organized. Empirical evidence for the process suggests that it is gradual rather than abrupt. Furthermore, research suggests that literacy development in young children does not proceed via one series of hierarchical levels or stages. However, neither does the evidence suggest that development proceeds idiosyncratically. Rather, evidence suggests that literacy development may follow a complicated pattern even though overall, children do progress toward conventional writing (Sulzby, 1985).

Thus, on the level of the nature of specific changes in development, there is a divergence between these two phenomena (i.e., the history of writing and the development of writing in the child) when one looks at their specific patterns of developmental data. Yet, the similarities in systematic change across both phenomena at a descriptive, global level cannot be dismissed. The present discussion now turns to this similarity in development in an effort to look for parallels to answer why both phenomena proceed toward phonetization. We are now asking, "Why did writing develop from this point to that point in the history of writing?" "Why does writing in the young child develop from this point to that point?" It is at this level---the level of mechanism of change---that we now turn in order to search for any source of

parallel change between the evolution of writing systems over time and written language development in the young child.

Theoretical Approach and Mechanism of Change

With regard to the first question, "Why did writing develop from this point to that point in the history of writing?" perhaps one can suggest that writing passed from one stage to another because at a certain time a new system was deemed better suited to local needs than the one currently in use. In other words, improvement and adaptation to conditions was the aim of the evolution of writing as it progressed across time, developing in the direction of a more suitable means of human communication. But was writing actually progressing? Can it be taken for granted that any new system of writing is normally better than the one that used was before? Thus, we must ask, "Was writing progressing as it passed along the course of evolution marked by the logographic, syllabic, and alphabetic systems?"

A look at the history of writing reveals the occurrence of the use of successively more analytic units of language to correspond to the marks on the page (or on the rock). Change has always been in this one direction: From the representation of ideas or meanings to the representation of words and morphemes, then to the representation of syllables, and then to the representation of yet smaller alphabetic units of vowels and consonants called phonemes. If one looks at writing from the broadest point of view, it appears that the alphabetic systems serve the aim of human communication better than the syllabic ones, and the syllabic ones serve the aim better than the logographic ones. If such is the case, the evolution of writing is orderly on the following basis: Each succeeding script required fewer different visual symbols to transcribe the spoken language than did the script before, thus reducing the burden on long-term memory for visual items required of learners and users. However, in consequence, each new script represented language in terms that were more remote from meaning than the units of the preceding script, thus posing new problems for learning and deciphering.

This phenomenon speaks to the second question: "Why does writing in the young child develop from one point to another toward alphabetic principles?" Is there any inherent reason why children who

speak English should expect writing to work by the alphabetic principle? Or, is it more reasonable to suppose that children's early notions about the way writing works might for a time settle on pictographic, ideographic, or syllabic writing? Alphabetic writing requires that the writer be able to break a word into its individual speech sounds before it can be written. This breaking out of speech sounds is a sophisticated language act---far more sophisticated than breaking sentences into words (as pictographic or ideographic writing requires) or words into syllables (as syllabic writing requires). Thus, discovering how to write in English involves making choices from a very large range of alternatives.

If children from certain cultures finally arrive at an alphabetic hypothesis, it appears that they may do so because any other hypothesis enters into unsolvable conflicts with information provided by the writing system which they experience in their environment. Thus, in addition to general parallels on the descriptive level between the history of writing and the development of writing in the child, we are drawn to a second form of broad parallel---a parallel at the level of the dynamics which perhaps explains the comprehensive changes across time in each of the two levels of analysis. The basis for this dynamic process lies in the sociocultural influences that surround language, and applies regardless of whether we are considering it from the phylogenetic level (changes in writing systems across historical time) or from the ontogenetic level (changes in writing systems across the child's lifetime). This proposition warrants closer examination.

Scribner and Cole (1981) view literacy as a cultural practice. For them, literacy is not merely knowing how to read and write, but applying this knowledge for specific purposes in specific contexts of use. As such, the practice of literacy is not merely the abstract skill in producing, decoding, and comprehending writing. Rather, when children become literate they use writing and reading in the performance of the practices which constitute their culture.

In line with this model of the development of competence in the sociocultural practice of literacy, Vygotsky (1978) claims that the mechanism underlying higher mental functions (such as writing and reading) is a copy from social interaction. In other words, all higher mental functions are regarded as internalized social relationships. Hence, in becoming literate, children are internalizing the structure of

the activities involving literacy that are conducted in the world around them. Vygotsky saw the individual as actively modifying the stimulus situation as part of responding to it. In one respect then, there is a literacy environment from which children abstract features of written language. But, Teale (1982) suggests that children who learn to read and write before going to school do not do so simply by observing others engaged in literacy events and by then independently manipulating written language. The child's literacy environment does not have an independent existence, but rather is constructed through the interactions with others. Thus, it is a mutually constructive process (Mehan & Wood, 1975).

Consistent with Vygotsky's position, Teale maintains that social interaction is the key. The entire process of early literacy development hinges on the experiences the child has in reading and writing activities which are mediated by literate others in the child's everyday life. Similarly, these interactive events serve as the inducer in the process of the evolution of writing across historical time, playing an essential role in both triggering and fostering the development of writing systems.

Teale (1982) does not deny the importance of the child's independent observations and practice with written language. For example, Ferreiro and Teberosky's (1982) extensive interviews with young children reveal that in their efforts to understand the writing system of their culture, children develop strategies that most likely have not been observed in use by adults but still serve important purposes in furthering their literacy growth. Nevetheless, Teale (1982) envisions the interactive events as the **sine qua non** of the roots of learning to write and read. Such events are substantive; i.e., they put the child in touch with the functions, uses, processes, and conventions of literacy in our society. Further, such events are motivtional for the child since they form links between positive affect and writing and reading.

According to Teale (1982), in order to formulate a theory that accounts for the process of children's early literacy development in the preschool years it is important to keep in mind that literacy is, above all, a social process. The environment must provide the opportunity for children to observe written language in use, as well as the opportunity to participate in activities where writing and reading are being used. Because literacy development is socially accomplished, it develops through social interaction with children internalizing (in a mutually-constructive way, rather than in a receptive way) the structure of

activities involving literacy in which they participate and which they observe being conducted in the world around them.

According to Gundlach (1982) in learning to write, children learn not only the forms of written language, but also writing processes. Further, a third basic dimension of learning to write involves learning the uses of written language. Work by educational anthropologists such as Heath (1982) has led us to consider the situations in which children write, both at school and at home. Gundlach (1982) suggests that if we are to understand why some children develop as writers and why others do not, we must turn our attention to the area of children's discovery of significant uses for written language. Along these lines, Gundlach (1982) suggests that when we study how children develop as readers and writers, we need an approach that accounts more fully for the developmental context of children's early writing. While many studies of children's early writing development have taken into account the linguistic, cognitive, or physiological constraints, efforts to guard against underestimating the significance of the social context as the child's chief resource in learning about writing have led to ethnographic research that has placed children's writing in the broader social context. There has been a shift of focus from studying the child's solitary composing operations to studying the social contexts of the child's early writing activities. For example, researchers have begun to study the various ways adults collaborate with young children in reading and writing undertakings and to trace cultural patterns reflected in families' habits. This ethnographic research has sought to provide rich descriptions of the circumstances in which children conduct their early writing experiments (Heath, 1982; Scollon & Scollon, 1981). As a complement to these comparative ethnographic studies, more narrowly focused microethnographic studies by Cazden (1981) have examined in detail the adult-child interactions that occur in the child's early reading and writing activities. Finally, expanding on the orderly and thorough longitudinal case study conducted by Bissex (1980), efforts have been made to add a horizontal dimension that examines the human interaction element of context while simultaneously charting change over time (Gundlach, McLane, Stott, & McNamee, 1985).

Summary

According to Gelb (1963), writing began at the time when humans learned to communicate his thoughts and feelings by visible signs, understandable at first only to the individual creating the marks. In the beginning, pictures served as a visual expression of an individual's ideas in a form that was, to a great extent, independent of speech (which has heretofore expressed his ideas in an auditory form). Thus, the relationship between writing and speech in the early stages of the evolution of writing was very loose, inasmuch as the written message did not correspond to exact forms of speech. In other words, a certain message could be read (i.e., put into words) in many different ways. In later periods, systematic application of phonetization enabled individuals to express their ideas in a form which could corresopnd to exact categories of speech. From then on writing gradually lost its character as an independent mode of expressing ideas and became linked to speech. Similarly, the young child's writing evolves from serving as a personal and private system for recording ideas, feelings, and speech to the conventional adult model, as writing comes to be viewed as a means of human intercommunication that requires a shared symbol system.

For many children the discovery that written language can be transformed into speech and speech into written language is not at all accidental (Ninio & Bruner, 1978; Scollon & Scollon, 1979; Heath, 1982). Parents in many cultural groups engage their children in school-oriented book-reading, picture-labeling games, and telling and reading bedtime stories. The modeling of parents and older siblings may provide the impetus for children to experiment with writing as they become immersed in the functions and uses of the written language system of their culture.

It may be then, as Gundlach suggests, that children begin to write because they want to---because they have come to value written language through interactions with parents, siblings, and literate others around them. But what uses do they discover for the activity once they begin to write? Gundlach suggests that in the early stages of written language development, while children continue to differentiate between the forms of drawing and writing and continues to establish correspondences between writing and

speech, they also extend the functions of several symbol systems---of speaking, drawing, and play---into the new activity of writing. Thus, they begins to write because they have come to value written language; they use written language for the purposes already important to them when they talk, when they draw, and when they play. Children write to name and organize parts of their worlds, to capture their experiences, to tell stories, to fulfill family and school responsibilities, to communicate messages to readers, to make lists to help them remember, etc. Gundlach (1982) suggests that children draw on different models in developing an understanding of the uses of writing. In other words, they take different routes to the same destination. Children develop uses for writing by extending the functions of familiar symbol-using activities to the activities that written language makes possible. Such a view is consistent with Vygotsky's (1978) remarks that play, drawing, and writing can be viewed as different moments in an essentially unified process of written language development, and with Bruner's observation that "new forms of communication emerge initially to fulfill old functions, then bring in new functions with them" (Bruner, 1973).

Conclusion

It has been argued here that there are descriptive similarities on a global level between the history of writing and the development of written language in the young child. This leads us to ask, "Can these global similarities suggest a model which proposes that, in a sense, individual history recapitulates cultural history?" To answer this question, we have looked to the specific developmental patterns of data of these two phenomena and when we did so, we found some common elements and some discrepancies between these two patterns. From our review of the history of orthography as well as the research review concerning children's developing knowledge of written language it appears that both phenomena in general proceed toward an understanding of the alphabetic principle. However, the order in which the knowledge and discovery occurs in the child as well as just what knowledge becomes understood during this progression toward the conventional, alphabetic adult model does not follow a strict one-to-one recapitulation model or explanation.

The present paper has also taken a look at a theoretical approach that may be relevant to understanding the global similarities in descriptive change of these two phenomena. Undoubtedly, if we are to understand the development of writing over time, we must bear in mind that writing evolved by means of a sociopsycholinguistic process. Thus, in order to understand the cognitive and linguistic processes involved in written language both at the individual and at the historical level, we must look at the linguistic, cognitive, and cultural contexts in which that processing occurs.

Similarly, with regard to the development of written language in the young child, it appears that the presence of environmental print, as well as involvement with those individuals who are actively engaged in print-related activities on an every day basis is, no doubt, essential since we are dealing with an object (i.e., written language) that is fundamentally cultural and social in nature. If we doubt this latter statement, let us ask, "How can one come to know the names of letters, the spatial orientation of reading and writing, etc. if one has not seen written material and witnessed acts of writing and reading?" Individuals cannot discover certain conventions of written language solely on their own. Rather, this kind of knowledge is transmitted socially by those who value and use it. It is not enough to merely have a language in order to have access to a writing system (historically and individually). Rather, it is also essential to reflect on the language and become aware of some of its fundamental properties. Thus, in order to analyze the obstacles to be overcome in becoming literate, a fruitful source of information lies in the search for similarities at the historical as well as the individual level.

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